Road M14-0.00-2.08 High Priority Watercourse Restorations & Road to Trail Conversion

EXISTING CONDITIONS AND PROJECT DESCRIPTION:

Old logging Road M14 (M14) traverses the Big River terrace surface that lies approximately 20 feet above the low-flow stream level. This old road is largely overgrown but is currently used by hikers, bicyclists, equestrians, and motorcyclists. Access by other motorized vehicles is not possible because of fillslope failures that have significantly reduced the width of the road.

M14 begins at a shared intersection with roads M1, M11, and M13 at approximate river mile 8.5. (see plan sheets 2 and 3). From the shared intersection, M14 extends several miles upstream and passes through the Mendocino Woodlands Recreation Area (Woodlands). Consequently, M14 is a critical link in a 25-mile loop that traverses through the heart of the Big River Unit, connects to the Woodlands, and then to several county roads that lead either to the town of Mendocino and Big River Beach or to the city of Willits.

The segment of M14 between the shared intersection and the Woodlands is approximately 2.5 miles. From the intersection to the Big River Unit property boundary is 2 miles. Along that 2 mile stretch, M14 generally lies within 200 feet of the river. Locally however, that distance can be as great as 600 feet and in other cases the road is perched immediately above the river. Most of M14 was built along the base of the hillside using typical cut and fill construction techniques. However, some segments are "all-fill" prisms constructed on the terrace surface and others are cut through the terrace. In general, through-cut areas are less than 5 feet deep, fillslopes extend between 3 feet and 12 feet above the terrace surface, and near-vertical cutslopes over 20 feet high are common.

In addition to the cut- and fillslopes, this 2-mile section of M14 includes 18 culverted Class II and Class III watercourse crossings. Because the road lies within the riparian corridor of Big River and was constructed on a terrace surface that is inundated by flood flows on a 5- to 8-year recurrence interval, portions of M14 are inundated as well, thereby limiting access and saturating the fill prism. Such flooding and saturation appears to have caused several segments of the fill prisms and native slopes to fail and/or erode and effectively undermining the road.

Preliminary measurements indicate that the 18 watercourse crossings represent approximately 3,200 cubic yards of anthropogenically deposited sediment in these watercourses. Besides being sediment artificially placed in the streams, these fill prisms and culverts form ecological obstructions between the forested uplands above the crossings and Big River located immediately downstream. In addition, 12 of the culverts are calculated to be too small to convey the 100-yr flood and its associated load of sediment and debris.

The California Department of Parks and Recreation (DPR) is removing the 18 culverted watercourse crossings, converting M14 from a road to a trail, and recontouring the lower-most segments of three spur roads. Specific tasks include: 1) excavation and removal of the fill prisms and culverts at 18 locations; 2) restoration of the Class II and Class III tributary channels that were buried; 3) obliteration and recontouring of approximately 1,000 feet of spur road; and 4) removal of approximately 900 feet (~1,500 cubic yards) of oversteepened fill slopes immediately adjacent to Big River.

The primary project benefit will be the removal of ecological obstructions on the Big River floodplain. Secondary benefits include the removal of approximately 3,200 cubic yards of fill that exist in the channels, and the removal of approximately 1,400 cubic yards of fill perched immediately above Big River. In addition, the removal of the 18 culverts eliminates the need for maintenance and the potential for plugging and catastrophic failure. A final benefit is the conversion of an old logging road into a trail that links together 25 miles of road in and around the Big River Unit providing access for recreation, emergency response, and the completion of restoration efforts.

An important aspect of this road to trail conversion will be the construction of ramps (inclined at 10 percent) into and out of the exhumed watercourses. Collectively, the removal of the watercourse crossings and the construction of the ramps will generate approximately 10,000 cubic yards of fill. In an effort to minimize the amount of fill to be trucked off-site, numerous segments of the road have been designated as fill storage sites where fill can be placed and compacted up to a maximum thickness of 18 inches. There are two other spur roads where fill can also be placed to recontour the road. Preliminary estimates indicate that the road segments and spur roads may collectively accommodate approximately 9,000 cubic yards of fill. These storage sites are described in the task list and are also shown on the plan sheets. Because of the limited access and tight working conditions, the excavation and fill placement activities will likely occur simultaneously and therefore the contractor will need to plan accordingly.

TASK DESCRIPTIONS FOR WORK ALONG ROAD M14.0

The full set of plans for the proposed restoration work along M14.0 includes the following list of station by station restoration and remediation tasks, five plan sheets, and a booklet titled: *Standard Specifications & Best Management Practices for Disturbed Lands Remediation*. The following task list and plan sheets alone are insufficient to describe and guide the proposed work. The following list includes estimates for the volumes of earth materials to be excavated (cut) and filled. The estimates are provided to assist in project planning purposes only and are not to be used as specific criteria to bid the proposed grading or as a warranty for payment. Actual volumes are expected to vary.

RESTORATION & REMEDIATION TASK LIST

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
0+00	0-350	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; place fill up to 6 feet high against the cutslope and bury hillclimb at Station 0-20 to 0+20; graded slopes shall be no steeper that 2:1 (horizontal:vertical); finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting. Construct two waterbars (spaced 100 feet apart on road above hillclimb to control roadway runoff.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		800
0+00	5+00	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; place fill up to 5 feet high against the adjacent cutslope; graded slopes shall be no steeper that 2:1 (horizontal:vertical); finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		580
4+50	6+50	Using hand crew and/or small earthmoving equipment, reroute and clear 5-foot wide trail approximately 200 feet through the trees west of the existing road rejoining M14 at old skid trail intersection located at Station 6+50. Install a rocked rolling dip where trail crosses the drainage path that will be determined following placement of fill between stations 560 and 950.	4.04, 4.06, 5.01		

*Stationing is for Road M14 unless otherwise noted.

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SHEET: 1 of 14

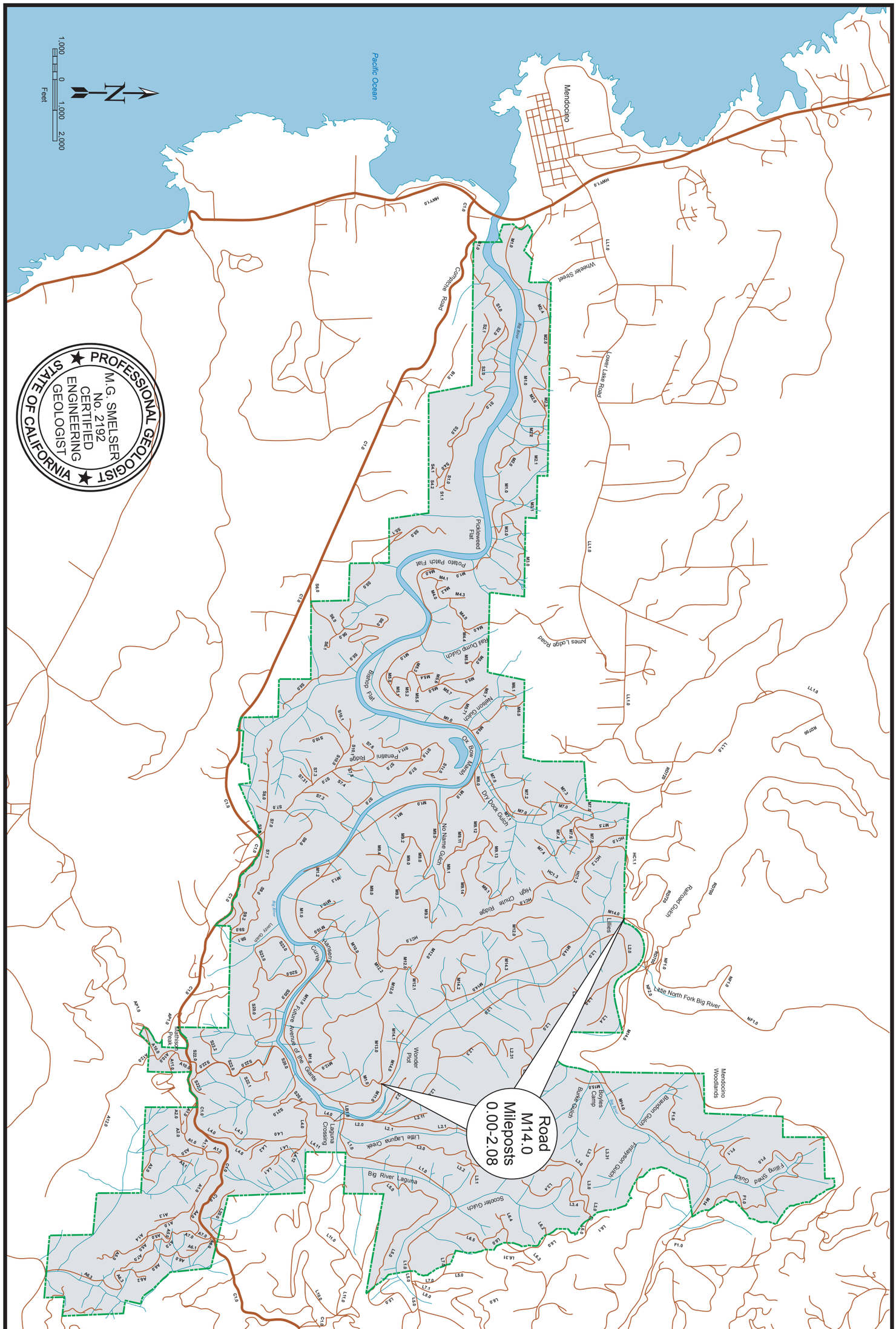
TITLE: Plan Sheet 1, Project Description, Task List for Stations 0-200 to 6+50

SCALE: none

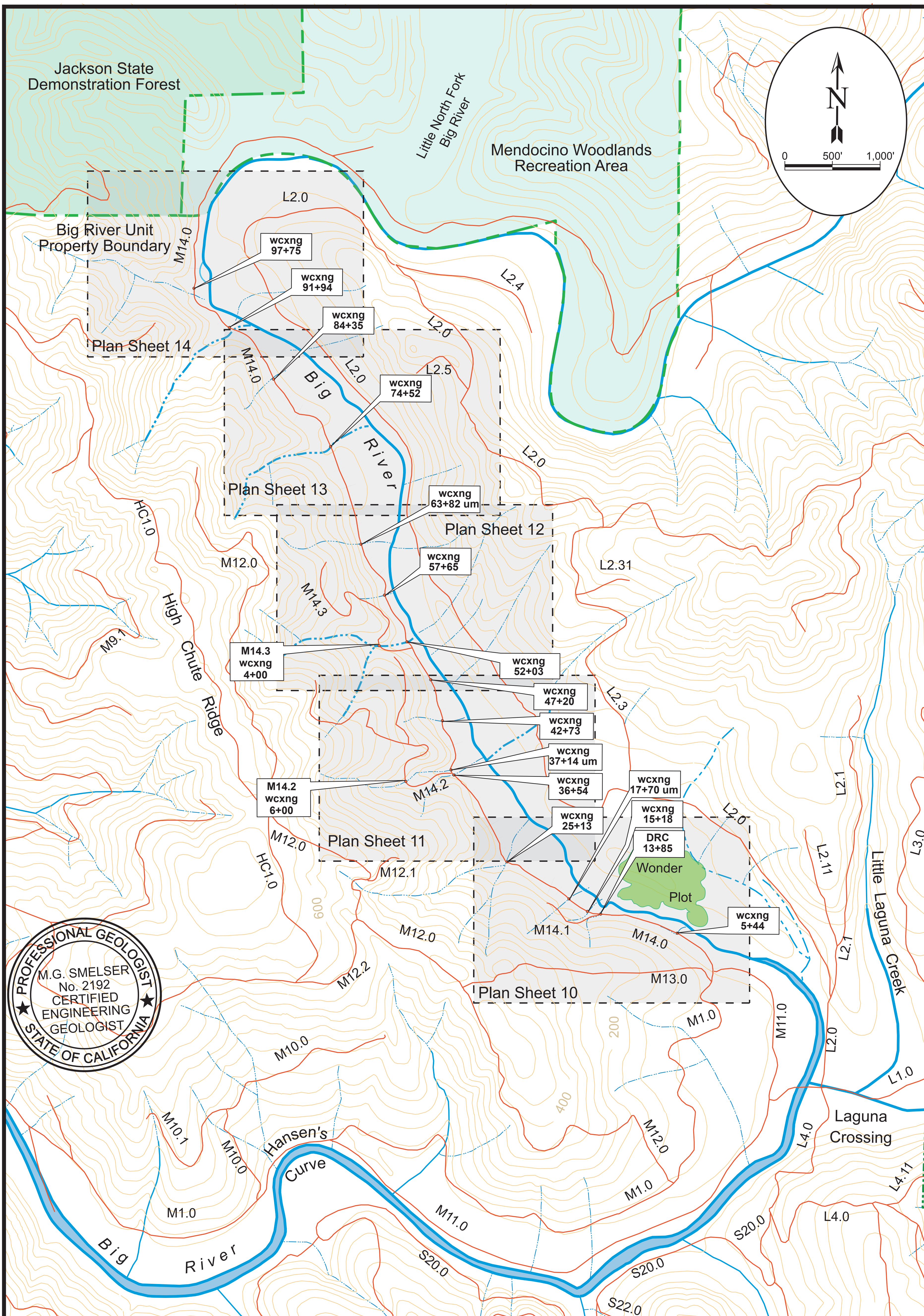
DATE: February 27, 2006

PROJECT: Road M14-0.00-2.08, High Priority Watercourse Restorations and Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

CALIFORNIA CONSERVATION



PROJECT: Road M14-0.00-2.08, High Priority Watercourse Restorations and Road to Trail Conversion Big River Unit Mendocino Headlands State Park, Mendocino, CA	TITLE: Plan Sheet 2, Location Map SCALE: 1 inch = 3,000 feet DATE: February 27, 2006	SHEET: 2 of 14


Jackson State
Demonstration Forest
Little North Fork
Big River
Mendocino Woodlands
Recreation Area
N
0
500'
1,000'
Big River Unit
Property Boundary
L2.0
M14.0
wcxng
97+75
wcxng
91+94
wcxng
84+35
L2.4
L2.0
Plan Sheet 14
M14.0
Big
L2.0
L2.5
wcxng
74+52
River
L2.0
Plan Sheet 13
wcxng
63+82 um
Plan Sheet 12
HC1.0
M12.0
L2.31
wcxng
57+65
M14.3
High
Chute
Ridge
M9.1
M14.3
wcxng
4+00
wcxng
52+03
wcxng
47+20
L2.3
wcxng
42+73
wcxng
37+14 um
M14.2
wcxng
6+00
M14.2
wcxng
36+54
wcxng
17+70 um
wcxng
15+18
L2.0
L2.1
wcxng
25+13
DRC
13+85
M12.0
Plan Sheet 11
Wonder
Plot
L2.11
Little Laguna Creek
L3.0
HC1.0
M12.1
600
wcxng
5+44
M14.1
M14.0
M12.0
L2.1
M13.0
M12.2
Plan Sheet 10
M11.0
M1.0
200
L2.0
M10.0
L1.0
400
Laguna
Crossing
M10.1
M12.0
Hansen's
Curve
M10.0
L4.0
M1.0
L4.11
M1.0
M11.0
S20.0
L4.0
Big
River
S20.0
S20.0
S22.0

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CALIFORNIA GEOLOGICAL SURVEY
CALIFORNIA CONSERVATION

PROJECT:
Road M14-0.00-2.08, High Priority Watercourse Restorations
and Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

TITLE: Plan Sheet 3, Index Map to Plan Sheets

SCALE: 1 inch = 1,000 feet
DATE: February 27, 2006

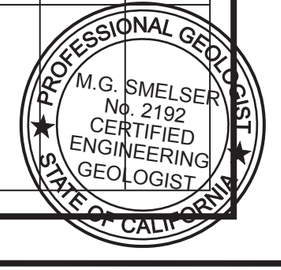
SHEET:
3 of 14

Road M14-0.00-2.08 High Priority Watercourse Restorations & Road to Trail Conversion

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
5+30	5+55	Excavate down approximately 8 feet down and remove culvert and approximately 8 linear feet of fill prism to daylight the tributary channel and match existing channel as determined by the PI; grade channel sidewalls 1.5:1 (horizontal:vertical); final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 13 percent; place large wood and angular rock (greater than 1 foot diameter) in the restored stream channel as channel control under the direction of the PI; outslope roadway approaches and install rolling dips to control roadway runoff from entering the watercourse; finish grade and mulch disturbed slopes. Place and compact fill evenly along fill site approved by the PI or haul offsite to an appropriate disposal site.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	145	
5+60	9+50	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and fill through-cut by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		865
9+40	9+80	Rocked rolling dip to control water from skid trail; final location to be determined by PI following placement of fill between stations 560 and 950.	4.06		
10+00	11+70	Remove berm and oversteepened fillslope, reduce roadway bench width to 12 feet and outslope 2 percent. Place and compact fill evenly along fill site approved by the PI or haul offsite to an appropriate disposal site.	4.06, 5.03, 5.04, 5.05, 5.07,5.08	155	
11+70	13+40	Remove berm and oversteepened fillslope, reduce roadway bench width to 12 feet, outslope 2 percent, and construct rolling dips every 150 feet; remove culvert at 1385. Place and compact fill evenly along fill site approved by the PI or haul offsite to an appropriate disposal site.	4.06, 5.03, 5.04, 5.05, 5.07,5.08	375	
Road M14.1 0+00	4+00	Enlarge existing inside ditch to approximately 3' wide along this road ; embed large rock and/or large wood to serve as channel armoring to reduce headcutting. Incorporate the outlet of this enhanced ditch into swale excavated between stations 560 and 950; finish grade and mulch disturbed areas for plantings.	5.01, 5.06, 5.07, 5.08	50	

*Stationing is for Road M14.0 unless otherwise noted.

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
Road M14.1 5+10	5+30	Inspect watercourse; clear and correct any diversions if necessary.			
13+40	13+80	Ramp (excavate) down approximately 4' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact fill evenly along fill site approved by the PI or haul offsite to an appropriate disposal site.	5.01, 5.06, 5.07, 5.08	45	
13+80	15+25	Remove 2 culverts and approximately 145 linear feet of fill prism down to terrace surface as determined by the PI to open up tributary floodplain; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 16 percent; place large wood and angular rock (greater than 1 foot diameter) in the restored stream channel as channel control under the direction of the PI; outslope roadway approaches and install rolling dips to control roadway runoff from entering the watercourse; finish grade and mulch disturbed slopes. Place and compact excavated fill evenly along fill site approved by the PI or haul offsite to an appropriate disposal site.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	645	
15+65	15+25	Ramp (excavate) down approximately 4' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI or haul offsite to an appropriate disposal site.	5.01, 5.06, 5.07, 5.08	45	
13+50	14+00	Place approximately 150 cubic yards of angular rip-rap has bank protection and channel outflow for the excavated swale between 1380 and 1525.			150
15+65	17+15	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		165



*Stationing is for Road M14.0 unless otherwise noted.

SHEET: 4 of 14

TITLE: Plan Sheet 4, Task List for Stations 5+30 to 17+15

SCALE: none

DATE: February 27, 2006

PROJECT:
Road M14-0.00-2.08, High Priority Watercourse Restorations and Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

Road M14-0.00-2.08 High Priority Watercourse Restorations & Road to Trail Conversion

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
17+17	17+67	Ramp (excavate) down approximately 5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI or haul offsite to an appropriate disposal site.	5.01, 5.06, 5.07, 5.08	90	
17+67	17+73	Remove culvert and fill prism down to terrace surface to open up tributary floodplainas determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 6 percent; rock the axis of this swale with an 8-inch thick layer of 3-inch to 4-inch angular rock (no rounded river rock) approved by the PI prior to placement. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	45	
18+23	17+73	Ramp (excavate) down approximately 5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	90	
18+23	24+10	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		650
24+33	24+83	Ramp (excavate) down approximately 5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	80	
24+83	25+43	Remove culvert and fill prism down to terrace surface to open up tributary floodplain as determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 1 percent; rock the axis of the excavated swale with an 8-inch thick layer of 3-inch to 4-inch angular rock (no rounded river rock) approved by the PI prior to placement. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	375	
25+93	25+43	Ramp (excavate) down approximately 5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	80	

*Stationing is for Road M14 unless otherwise noted.

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
27+00	35+00	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		885
35+70	36+20	Ramp (excavate) down approximately 5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	70	
36+20	37+50	Remove culvert and fill prism down to terrace surface to open up tributary floodplain as determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 3 percent; rock the axis of the excavated swale with an 8-inch thick layer of 3-inch to 4-inch angular rock (no rounded river rock) approved by the PI prior to placement. Place and compact fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	700	
38+00	37+50	Ramp (excavate) down approximately 5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	70	
Road M14.2 0+00	5+50	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 24 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade finish grade as a slope instead of a trail and mulch for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		815
Road M14.2 5+88	6+12	Remove culvert and fill, armor channel through remaining fill and restore stream channel, as determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 6 percent; place large wood and rock in restored channel under the direction of the PI prior to placement. Place and compact fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	55	

*Stationing is for Road M14 unless otherwise noted.

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SHEET: 5 of 14

TITLE: Plan Sheet 5, Remediation Task List for Stations 17+17 to 37+50

SCALE: none

DATE: February 27, 2006

PROJECT:
Road M14-0.00-2.08, High Priority Watercourse Restorations and Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

Road M14-0.00-2.08 High Priority Watercourse Restorations & Road to Trail Conversion

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
39+00	41+50	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		275
42+28	42+58	Ramp (excavate) down approximately 3' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	40	
42+58	42+88	Remove culvert and fill prism down to terrace surface to open up tributary floodplain as determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 3 percent; rock the axis of the excavated swale with an 8-inch thick layer of 3-inch to 4-inch angular rock (no rounded river rock) approved by the PI prior to placement. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	160	
43+18	42+88	Ramp (excavate) down approximately 3' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	40	
43+50	46+50	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		330
46+82	47+12	Ramp (excavate) down approximately 3' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along roadway between M14.2 stations 0 and 550.	5.01, 5.06, 5.07, 5.08	60	

*Stationing is for Road M14 unless otherwise noted.

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
47+12	47+27	Remove culvert and fill prism down to terrace surface to open up tributary floodplain as determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments; rock the axis of the excavated swale with an 8-inch thick layer of 3-inch to 4-inch angular rock (no rounded river rock) approved by the PI prior to placement. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	120	
47+57	47+27	Ramp (excavate) down approximately 3' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	60	
48+00	50+75	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		330
Road M14.3 0+00	3+50	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 24 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade as a slope instead of a trail and mulch for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		520
Road M14.3 3+62	4+38	Excavate down approximately 9 feet down and remove culvert and approximately 75 liner feet of fill prism to daylight the tributary channel and match existing channel as determined by the PI; grade channel sidewalls 1.5:1 (horizontal:vertical); final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 6 percent; place large wood and angular rock (greater than 1 foot diameter) in the restored stream channel as channel control under the direction of the PI; outslope roadway approaches and install rolling dips to control roadway runoff from entering the watercourse; finish grade and mulch disturbed slopes. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	900	

*Stationing is for Road M14 unless otherwise noted.

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SHEET: 6 of 14

TITLE: Plan Sheet 6, Remediation Task List for Stations 37+50 to 51+00

SCALE: none

DATE: February 27, 2006

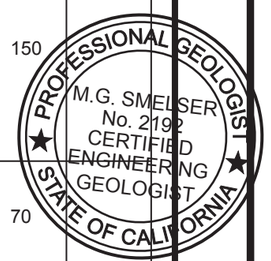
PROJECT: Road M14-0.00-2.08, High Priority Watercourse Restorations and Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

Road M14-0.00-2.08 High Priority Watercourse Restorations & Road to Trail Conversion

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
50+76	51+91	Ramp (excavate) down approximately 11' at 10% down to terrace/floodplain surface as determined by the PI. Ramp may be directed upstream in order to achieve design grade, but only under the explicit direction and approval of the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	540	
51+91	52+14	Remove culvert and fill prism down to terrace surface to open up tributary floodplain as determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 6 percent; place large wood and angular rock (greater than 1 foot diameter) in the restored stream channel as channel control under the direction of the PI; outslope roadway approaches and install rolling dips to control roadway runoff from entering the watercourse; finish grade and mulch disturbed slopes. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	425	
53+29	52+14	Ramp (excavate) down approximately 11' at 10% down to terrace/floodplain surface as determined by the PI. Ramp may be directed upstream in order to achieve design grade, but only under the explicit direction and approval of the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	540	
53+30	54+20	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		100
54+20	55+40	Remove berm and oversteepened fillslope by grading 15' of fillslope to 2:1 (horizontal:vertical), reduce roadway prism width to 12 feet in the process, obliterate inside ditch, outslope roadway 2 percent, and construct rolling dips every 150 feet. Place and compact excavated fill evenly along fill site approved by the PI.	4.06, 5.03, 5.04, 5.05, 5.07,5.08	265	
55+40	56+95	Remove fallen trees from fillslope failure and place as little fill as necessary to bridge this area for safe passage of heavy equipment during construction activities further up the road; all fill placed in the fillslope failure shall be removed during final grading of this site as described under stations 5490 to 5745.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	0	

*Stationing is for Road M14 unless otherwise noted.

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
54+90	55+40	Ramp (excavate) down approximately 5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	65	
55+40	56+95	Excavate 6-foot wide trail bench around the arcuate headscarp of the fillslope failure as identified and flagged in the field by the PI; cutslope along the inboard edge shall be graded to approximately 0.8:1 (horizontal:vertical); and the oversteepened headscarp slope along the outboard edge of the trail shall be graded to approximately 1.3:1 (horizontal:vertical). Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	105	
57+45	56+95	Ramp (excavate) down approximately 5' at 10% down to terrace/floodplain surface as determined by the PI. Remove berm and oversteepened fillslope, reduce roadway bench width to 12 feet, outslope 2 percent, and construct rolling dips every 150 feet. Place and compact excavated fill evenly along fill site approved by the PI.	4.06, 5.03, 5.04, 5.05, 5.07,5.08	110	
57+08	57+53	Ramp (excavate) down approximately 4.5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	70	
57+53	57+76	Remove culvert and fill prism down to terrace surface to open up tributary floodplain as determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 5 percent; rock the axis of the excavated swale with an 8-inch thick layer of 3-inch to 4-inch angular rock (no rounded river rock) approved by the PI prior to placement. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	150	
58+22	57+76	Ramp (excavate) down approximately 4.5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	70	
57+85	58+50	Remove berm and oversteepened fillslope, reduce roadway bench width to 12 feet, outslope 2 percent, and construct rolling dips every 150 feet. Place and compact excavated fill evenly along fill site approved by the PI.	4.06, 5.03, 5.04, 5.05,	140	



*Stationing is for Road M14 unless otherwise noted.

SHEET: 7 of 14

TITLE: Plan Sheet 7, Remediation Task List for Stations 50+760 to 58+50

SCALE: none

DATE: February 27, 2006

PROJECT: Road M14-0.00-2.08, High Priority Watercourse Restorations and Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

Road M14-0.00-2.08 High Priority Watercourse Restorations & Road to Trail Conversion

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
59+00	63+50	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting ill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		500
63+38	63+78	Ramp (excavate) down approximately 4' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	160	
63+78	63+86	Remove culvert and fill prism down to terrace surface to open up tributary floodplain as determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 5 percent; rock the axis of the excavated swale with an 8-inch thick layer of 3-inch to 4-inch angular rock (no rounded river rock) approved by the PI prior to placement. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	130	
64+26	63+86	Ramp (excavate) down approximately 4' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	160	
64+50	73+00	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		940
73+97	74+47	Ramp (excavate) down approximately 5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	250	
74+47	74+57	Remove culvert and fill prism down to terrace surface to open up tributary floodplain as determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 2 percent; rock the axis of the	5.01, 5.04, 5.05, 5.06, 5.07, 5.08		

(continued next page)

*Stationing is for Road M14 unless otherwise noted.

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
74+47 continued	74+57	excavated swale with an 8-inch thick layer of 3-inch to 4-inch angular rock (no rounded river rock) approved by the PI prior to placement. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	160	
75+07	74+57	Ramp (excavate) down approximately 5' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	250	
75+50	77+50	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting ill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		220
77+66	79+66	Roadway fillslope has slumped -- no fill placement along this segment			
77+66	79+66	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting ill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		385
83+30	84+30	Ramp (excavate) down approximately 10' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	250	
84+30	84+40	Remove culvert and fill prism down to terrace surface to open up tributary floodplain as determined by the PI; final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 12 percent; rock the axis of the excavated swale with an 8-inch thick layer of 3-inch to 4-inch angular rock (no rounded river rock) approved by the PI prior to placement. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	100	
85+40	84+40	Ramp (excavate) down approximately 10' at 10% down to terrace/floodplain surface as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	250	

*Stationing is for Road M14 unless otherwise noted.

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SHEET: 8 of 14

TITLE: Plan Sheet 8, Remediation Task List for Stations 59+00 to 85+40

SCALE: none

DATE: February 27, 2006

PROJECT: Road M14-0.00-2.08, High Priority Watercourse Restorations and Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

CALIFORNIA DEPARTMENT OF CONSERVATION

Road M14-0.00-2.08 High Priority Watercourse Restorations & Road to Trail Conversion

Project Stationing*		Restoration/Remediation Task	Pertinent Specs.	Cut Vol. (cu. yds)	Fill Vol. (cu. yds)
Begin	End				
85+50	91+00	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		610
91+34	91+84	Ramp (excavate) down approximately 5' at 10% down to native channel bottom as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	55	
91+84	92+04	Excavate down approximately 5 feet down and remove culvert and approximately 30 linear feet of fill prism to daylight the tributary channel and match existing channel as determined by the PI; grade channel sidewalls 1.5:1 (horizontal:vertical); final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 5 percent; place large wood and angular rock (greater than 1 foot diameter) in the restored stream channel as channel control under the direction of the PI; outslope roadway approaches and install rolling dips to control roadway runoff from entering the watercourse; finish grade and mulch disturbed slopes. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	90	
92+54	92+04	Ramp (excavate) down approximately 5' at 10% down to native channel bottom as determined by the PI. Place and compact excavated fill evenly along fill site approved by the PI.	5.01, 5.06, 5.07, 5.08	55	
92+54	93+30	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 6-foot wide, outsloped trail along the inboard edge; outslope, finish grade, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		85
93+30	94+95	Remove berm and oversteepened fillslope, reduce roadway bench width to 12 feet, outslope 2 percent, and construct rolling dips every 150 feet. Place and compact excavated fill evenly along fill site approved by the PI.	4.06, 5.03, 5.04, 5.05, 5.07,5.08	360	
94+95	95+35	**Streamside slump, no heavy equipment/vehicle passage, end of the road for restoration from milepost 0+00.**			
95+35	95+95	Remove berm and oversteepened fillslope, reduce roadway bench width to 12 feet, outslope 2 percent, and construct rolling dips every 150 feet. Place and compact excavated fill evenly along fill site approved by the PI.	4.06, 5.03, 5.04, 5.05, 5.07,5.08	130	
95+95	97+50	Lillie's River Access; No restoration activities proposed.			
97+58	97+70	Ramp (excavate) down approximately 8' at 70% down to native channel bottom as determined by the PI. Place and compact excavated fill evenly along roadway between stations 9900 and 10300.	5.01, 5.06, 5.07, 5.08	55	
97+70	97+80	Excavate down approximately 8 feet down and remove culvert and approximately 20 linear feet of fill prism to daylight the tributary channel and match existing channel as determined by the PI; grade channel sidewalls 1.5:1 (horizontal:vertical); final channel gradient is to connect undisturbed upstream and downstream channel segments and will likely be approximately 7 percent; place large wood and angular rock (greater than 1 foot diameter) in the restored stream channel as channel control under the direction of the PI; outslope roadway approaches and install rolling dips to control roadway runoff from entering the watercourse; finish grade and mulch disturbed slopes. Construct approximately 30-foot long foot bridge as barrier to automobile and truck access.	5.01, 5.04, 5.05, 5.06, 5.07, 5.08	115	
97+92	97+80	Ramp (excavate) down approximately 8' at 70% down to native channel bottom as determined by the PI. Place and compact excavated fill evenly along roadway between stations 9900 and 10300.	5.01, 5.06, 5.07, 5.08	55	
99+00	104+00	**Fill Storage Site -** Brush and rip roadway and lower portion of adjacent cutslope; raise roadbed and flat areas immediately adjacent not more than 18 inches by evenly placing and compacting fill; construct rolling dips every 150 feet and at the approaches (heads of ramps) leading down to watercourses; finish grade a 12-foot wide, outsloped road, and mulch the remaining (outboard side) of fill prism for native planting.	4.03, 5.01, 5.02, 5.05, 5.07, 5.08		550

NOTE: The total volume of earth materials estimated to be excavated is 9,600 cubic yards, and it appears that an equal amount of area to place the excavated material has been identified resulting in a balanced project. If necessary, additional areas to place fill may identified by the PI as work progresses.

*Stationing is for Road M14 unless otherwise noted.

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SHEET: 9 of 14

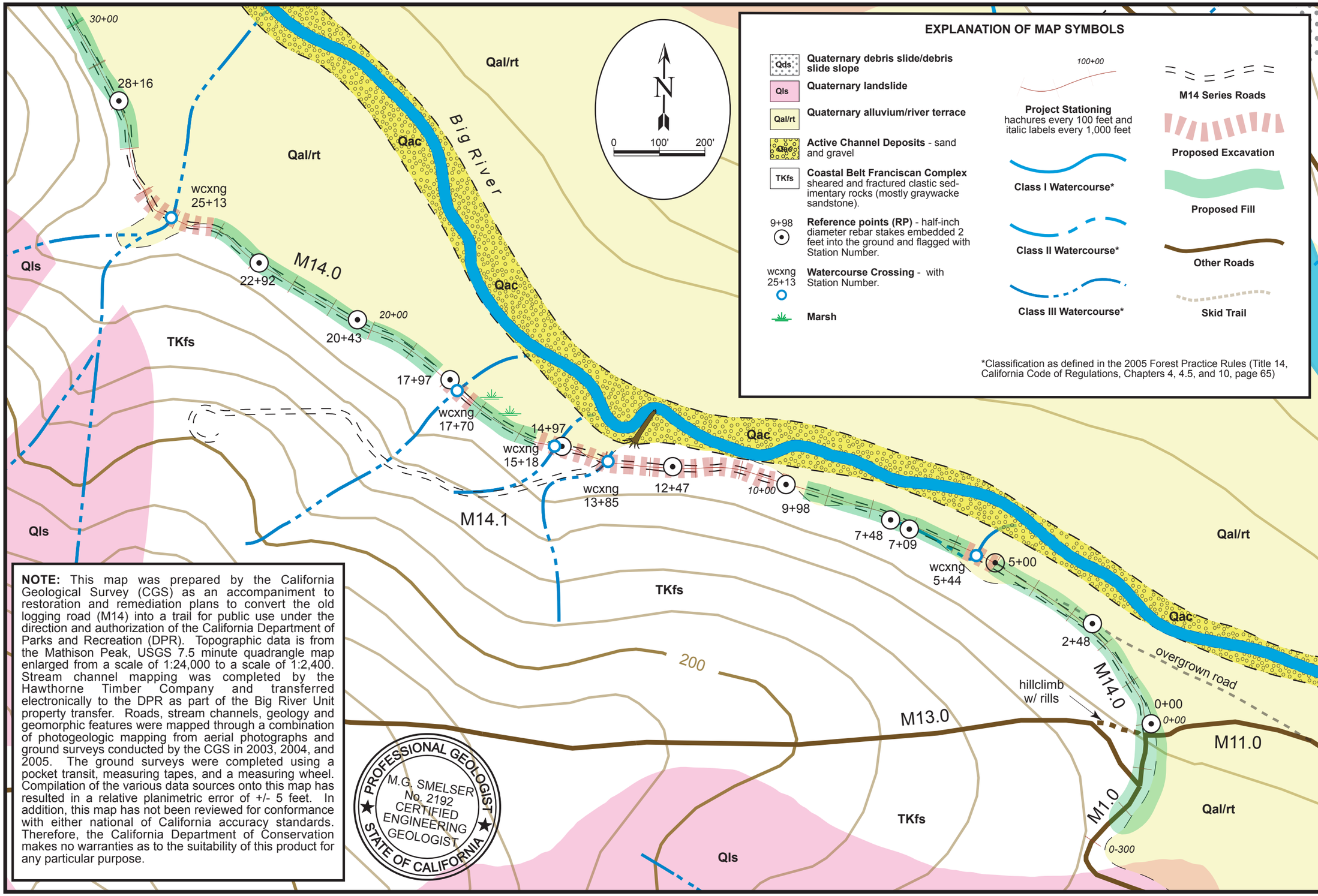
TITLE: Plan Sheet 9, Remediation Task List for Stations 85+50 to 104+00

SCALE: none

DATE: February 27, 2006

PROJECT:
Road M14-0.00-2.08, High Priority Watercourse Restorations and Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

CALIFORNIA DEPARTMENT OF CONSERVATION



EXPLANATION OF MAP SYMBOLS

- **Qds** — Quaternary debris slide/debris slide slope
- **Qls** — Quaternary landslide
- **Qal/rt** — Quaternary alluvium/river terrace
- **Qac** — Active Channel Deposits - sand and gravel
- **TKfs** — Coastal Belt Franciscan Complex sheared and fractured clastic sedimentary rocks (mostly graywacke sandstone).
- 9+98 — **Reference points (RP)** - half-inch diameter rebar stakes embedded 2 feet into the ground and flagged with Station Number.
- wcxng 25+13 — **Watercourse Crossing** - with Station Number.
- **Marsh**

100+00

Project Stationing hachures every 100 feet and italic labels every 1,000 feet

Class I Watercourse*

Class II Watercourse*

Class III Watercourse*

M14 Series Roads

Proposed Excavation

Proposed Fill

Other Roads

Skid Trail

*Classification as defined in the 2005 Forest Practice Rules (Title 14, California Code of Regulations, Chapters 4, 4.5, and 10, page 65)

NOTE: This map was prepared by the California Geological Survey (CGS) as an accompaniment to restoration and remediation plans to convert the old logging road (M14) into a trail for public use under the direction and authorization of the California Department of Parks and Recreation (DPR). Topographic data is from the Mathison Peak, USGS 7.5 minute quadrangle map enlarged from a scale of 1:24,000 to a scale of 1:2,400. Stream channel mapping was completed by the Hawthorne Timber Company and transferred electronically to the DPR as part of the Big River Unit property transfer. Roads, stream channels, geology and geomorphic features were mapped through a combination of photogeologic mapping from aerial photographs and ground surveys conducted by the CGS in 2003, 2004, and 2005. The ground surveys were completed using a pocket transit, measuring tapes, and a measuring wheel. Compilation of the various data sources onto this map has resulted in a relative planimetric error of +/- 5 feet. In addition, this map has not been reviewed for conformance with either national of California accuracy standards. Therefore, the California Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

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SHEET: 10 of 14

TITLE: Plan Sheet 10, Stations 0+00 to 30+65

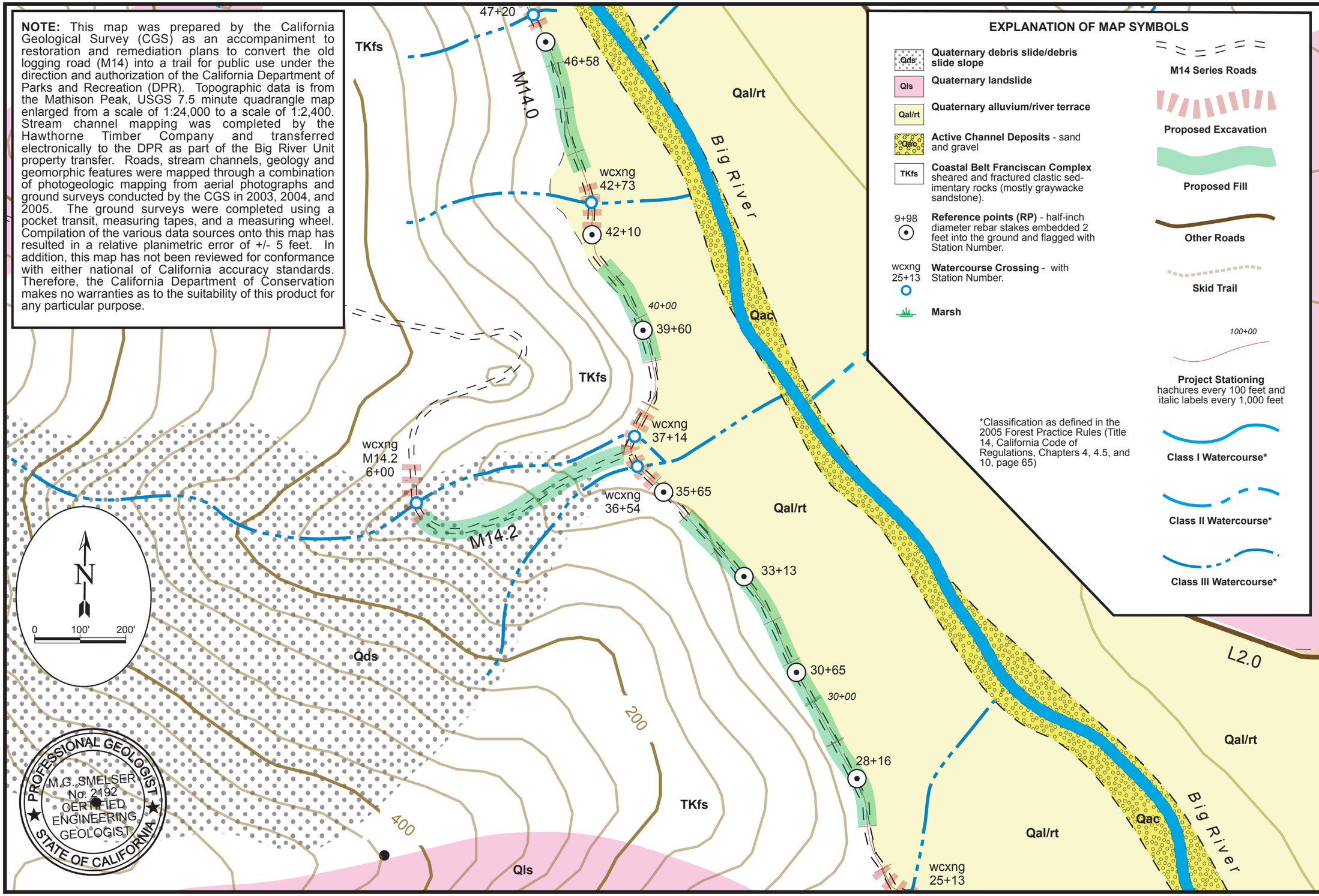
SCALE: 1 inch = 200 feet

DATE: February 27, 2006

PROJECT:
Road M14-0.00-2.08, High Priority Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

CALIFORNIA CONSERVATION

NOTE: This map was prepared by the California Geological Survey (CGS) as an accompaniment to restoration and remediation plans to convert the old logging road (M14) into a trail for public use under the direction and authorization of the California Department of Parks and Recreation (DPR). Topographic data is from the Mathison Peak, USGS 7.5 minute quadrangle map enlarged from a scale of 1:24,000 to a scale of 1:2,400. Stream channel mapping was completed by the Hawthorne Timber Company and transferred electronically to the DPR as part of the Big River Unit property transfer. Roads, stream channels, geology and geomorphic features were mapped through a combination of photogeologic mapping from aerial photographs and ground surveys conducted by the CGS in 2003, 2004, and 2005. The ground surveys were completed using a pocket transit, measuring tapes, and a measuring wheel. Compilation of the various data sources onto this map has resulted in a relative planimetric error of +/- 5 feet. In addition, this map has not been reviewed for conformance with either national of California accuracy standards. Therefore, the California Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.



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EXPLANATION OF MAP SYMBOLS

- **Qds** — **Quaternary debris slide/debris slide slope**
- **Qls** — **Quaternary landslide**
- **Qal/rt** — **Quaternary alluvium/river terrace**
- **Qac** — **Active Channel Deposits** - sand and gravel
- **TKfs** — **Coastal Belt Franciscan Complex** sheared and fractured clastic sedimentary rocks (mostly graywacke sandstone).
- 9+98 — **Reference points (RP)** - half-inch diameter rebar stakes embedded 2 feet into the ground and flagged with Station Number.
- wcxng 25+13 — **Watercourse Crossing** - with Station Number.
- **Marsh**

M14 Series Roads

Proposed Excavation

Proposed Fill

Other Roads

Skid Trail

100+00 — **Project Stationing** hachures every 100 feet and italic labels every 1,000 feet

*Classification as defined in the 2005 Forest Practice Rules (Title 14, California Code of Regulations, Chapters 4, 4.5, and 10, page 65)

Class I Watercourse*

Class II Watercourse*

Class III Watercourse*

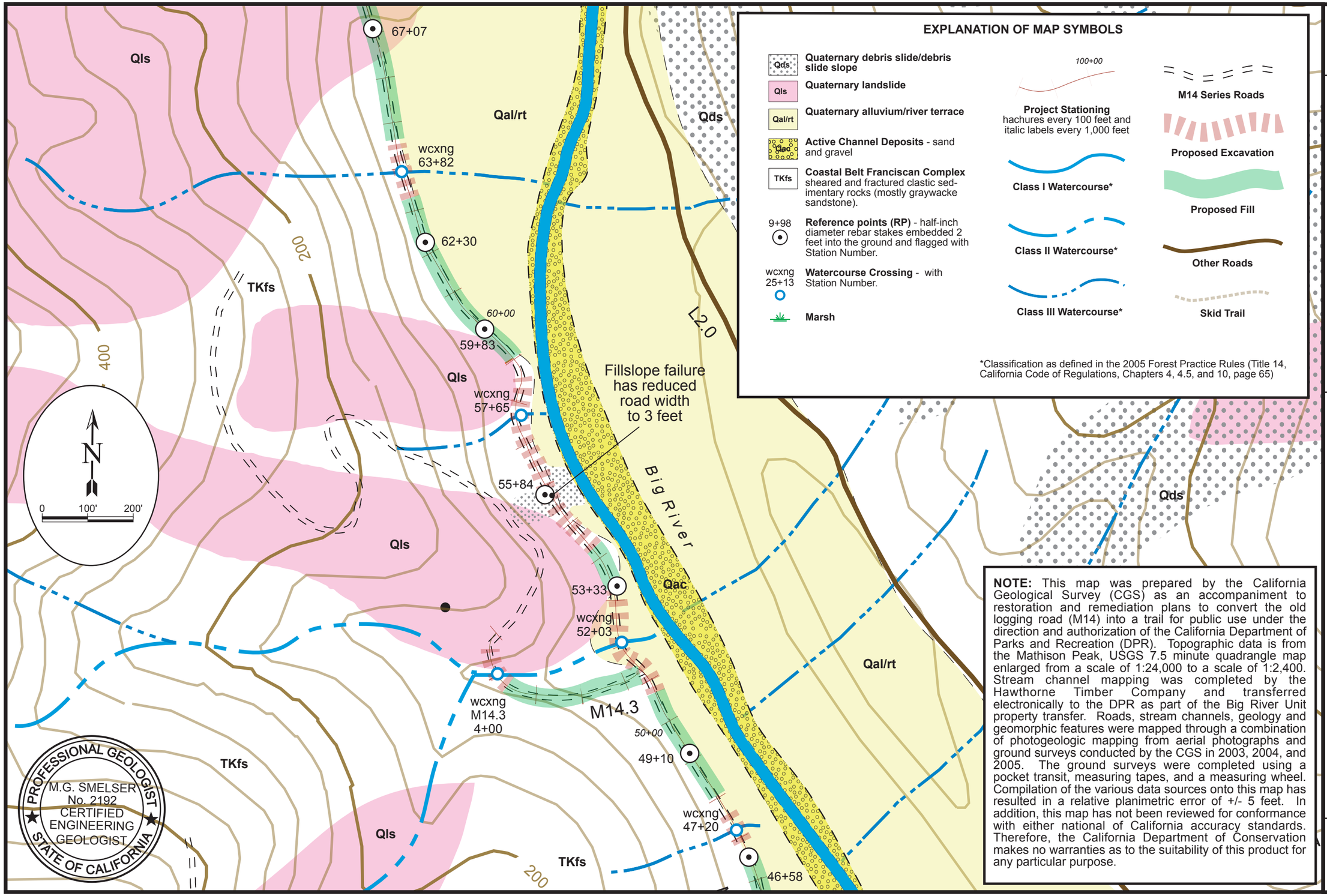
SHEET: 11 of 14

TITLE: Plan Sheet 11, Stations 30+65 to 47+20

SCALE: 1 inch = 200 feet

DATE: February 27, 2006

PROJECT:
Road M14-0.00-2.08, High Priority Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA



EXPLANATION OF MAP SYMBOLS

- **Qds** — **Quaternary debris slide/debris slide slope**
- **Qls** — **Quaternary landslide**
- **Qal/rt** — **Quaternary alluvium/river terrace**
- **Qac** — **Active Channel Deposits** - sand and gravel
- **TKfs** — **Coastal Belt Franciscan Complex** sheared and fractured clastic sedimentary rocks (mostly graywacke sandstone).
- 9+98 — **Reference points (RP)** - half-inch diameter rebar stakes embedded 2 feet into the ground and flagged with Station Number.
- wcxng 25+13 — **Watercourse Crossing** - with Station Number.
- **Marsh**

100+00

Project Stationing
hachures every 100 feet and italic labels every 1,000 feet

Class I Watercourse*

Class II Watercourse*

Class III Watercourse*

M14 Series Roads

Proposed Excavation

Proposed Fill

Other Roads

Skid Trail

*Classification as defined in the 2005 Forest Practice Rules (Title 14, California Code of Regulations, Chapters 4, 4.5, and 10, page 65)

NOTE: This map was prepared by the California Geological Survey (CGS) as an accompaniment to restoration and remediation plans to convert the old logging road (M14) into a trail for public use under the direction and authorization of the California Department of Parks and Recreation (DPR). Topographic data is from the Mathison Peak, USGS 7.5 minute quadrangle map enlarged from a scale of 1:24,000 to a scale of 1:2,400. Stream channel mapping was completed by the Hawthorne Timber Company and transferred electronically to the DPR as part of the Big River Unit property transfer. Roads, stream channels, geology and geomorphic features were mapped through a combination of photogeologic mapping from aerial photographs and ground surveys conducted by the CGS in 2003, 2004, and 2005. The ground surveys were completed using a pocket transit, measuring tapes, and a measuring wheel. Compilation of the various data sources onto this map has resulted in a relative planimetric error of +/- 5 feet. In addition, this map has not been reviewed for conformance with either national of California accuracy standards. Therefore, the California Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

SHEET: 12 of 14

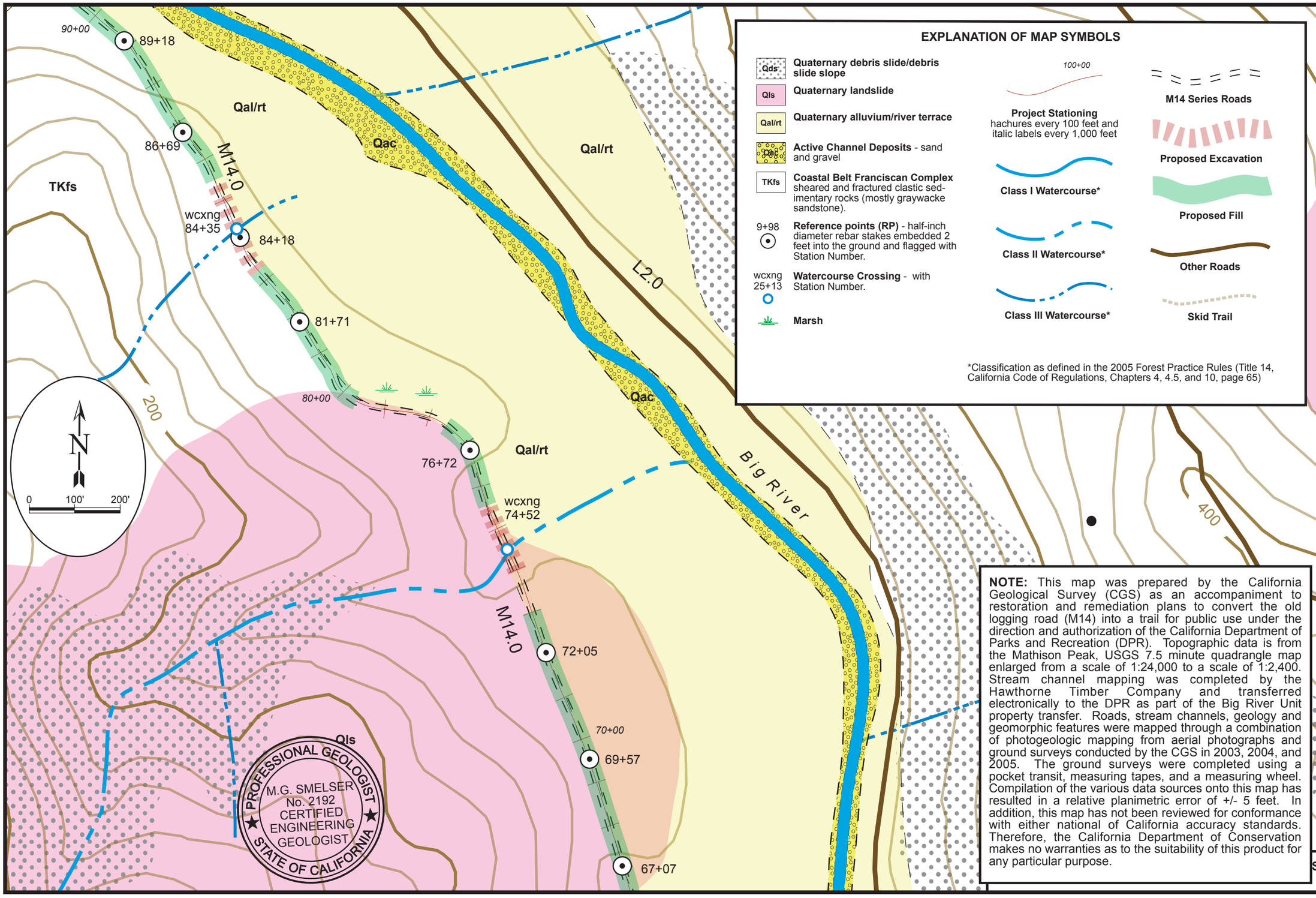
TITLE: Plan Sheet 12, Stations 46+58 to67+07

SCALE: 1 inch = 200 feet

DATE: February 27, 2006

PROJECT:
Road M14-0.00-2.08, High Priority Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

CALIFORNIA CONSERVATION



EXPLANATION OF MAP SYMBOLS

- Qds — **Quaternary debris slide/debris slide slope**
- Qls — **Quaternary landslide**
- Qal/rt — **Quaternary alluvium/river terrace**
- Qac — **Active Channel Deposits** - sand and gravel
- TKfs — **Coastal Belt Franciscan Complex** sheared and fractured clastic sedimentary rocks (mostly graywacke sandstone).
- 9+98 — **Reference points (RP)** - half-inch diameter rebar stakes embedded 2 feet into the ground and flagged with Station Number.
- wcxng 25+13 — **Watercourse Crossing** - with Station Number.
- **Marsh**

100+00

Project Stationing hachures every 100 feet and italic labels every 1,000 feet

Class I Watercourse*

Class II Watercourse*

Class III Watercourse*

M14 Series Roads

Proposed Excavation

Proposed Fill

Other Roads

Skid Trail

*Classification as defined in the 2005 Forest Practice Rules (Title 14, California Code of Regulations, Chapters 4, 4.5, and 10, page 65)

NOTE: This map was prepared by the California Geological Survey (CGS) as an accompaniment to restoration and remediation plans to convert the old logging road (M14) into a trail for public use under the direction and authorization of the California Department of Parks and Recreation (DPR). Topographic data is from the Mathison Peak, USGS 7.5 minute quadrangle map enlarged from a scale of 1:24,000 to a scale of 1:2,400. Stream channel mapping was completed by the Hawthorne Timber Company and transferred electronically to the DPR as part of the Big River Unit property transfer. Roads, stream channels, geology and geomorphic features were mapped through a combination of photogeologic mapping from aerial photographs and ground surveys conducted by the CGS in 2003, 2004, and 2005. The ground surveys were completed using a pocket transit, measuring tapes, and a measuring wheel. Compilation of the various data sources onto this map has resulted in a relative planimetric error of +/- 5 feet. In addition, this map has not been reviewed for conformance with either national of California accuracy standards. Therefore, the California Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

SHEET: 13 of 14

TITLE: Plan Sheet 13, Stations 67+07 to 89+18

SCALE: 1 inch = 200 feet

DATE: February 27, 2006

PROJECT:
Road M14-0.00-2.08, High Priority Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

NOTE: This map was prepared by the California Geological Survey (CGS) as an accompaniment to restoration and remediation plans to convert the old logging road (M14) into a trail for public use under the direction and authorization of the California Department of Parks and Recreation (DPR). Topographic data is from the Mathison Peak, USGS 7.5 minute quadrangle map enlarged from a scale of 1:24,000 to a scale of 1:2,400. Stream channel mapping was completed by the Hawthorne Timber Company and transferred electronically to the DPR as part of the Big River Unit property transfer. Roads, stream channels, geology and geomorphic features were mapped through a combination of photogeologic mapping from aerial photographs and ground surveys conducted by the CGS in 2003, 2004, and 2005. The ground surveys were completed using a pocket transit, measuring tapes, and a measuring wheel. Compilation of the various data sources onto this map has resulted in a relative planimetric error of +/- 5 feet. In addition, this map has not been reviewed for conformance with either national of California accuracy standards. Therefore, the California Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

Mendocino Woodlands Recreational Area

TKfs

Jackson State Demonstration Forest

Big River Unit

M14.0

End of Project Grading

Qal/rt

100+00

99+60

Lillie's Beach (accessible w/ 2WD vehicles)

wcxng 97+75

Fillslope failure has reduced road width to 9 feet

96+65

Qac

94+14

wcxng 91+94

90+00

89+18

Qds

TKfs

Qal/rt

L2.0

Big River

200

400

N

0 100' 200'

EXPLANATION OF MAP SYMBOLS

- Qds — **Quaternary debris slide/debris slide slope**
- Qls — **Quaternary landslide**
- Qal/rt — **Quaternary alluvium/river terrace**
- Qac — **Active Channel Deposits** - sand and gravel
- TKfs — **Coastal Belt Franciscan Complex** sheared and fractured clastic sedimentary rocks (mostly graywacke sandstone).
- 9+98 — **Reference points (RP)** - half-inch diameter rebar stakes embedded 2 feet into the ground and flagged with Station Number.
- wcxng 25+13 — **Watercourse Crossing** - with Station Number.
- **Marsh**
- 100+00 — **Project Stationing** hachures every 100 feet and italic labels every 1,000 feet
- **Class I Watercourse***
- **Class II Watercourse***
- **Class III Watercourse***
- **M14 Series Roads**
- **Proposed Excavation**
- **Proposed Fill**
- **Other Roads**
- **Skid Trail**

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SHEET: 14 of 14

TITLE: Plan Sheet 14, Stations 86+69 to 104+00

SCALE: 1 inch = 200 feet

DATE: February 27, 2006

PROJECT:
Road M14-0.00-2.08, High Priority Road to Trail Conversion
Big River Unit
Mendocino Headlands State Park, Mendocino, CA

CALIFORNIA GEOLOGICAL SURVEY
CALIFORNIA CONSERVATION